AMENDMENTS TO THE CLAIMS

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). The following listing of claims replaces all prior versions, and listings, of claims in this application.

Please AMEND claims 1, 5, 8, 15, 21, 23, 25, 30, and 32 to read as follows.

1. (CURRENTLY AMENDED) An optical transmission method, using Raman amplification to ~~transmit~~ amplify a wavelength division multiplexed signal light including a plurality of optical signals of different wavelengths transmitted among a plurality of optical transmission apparatuses and supplying a pumping light to a Raman amplification medium existing on an optical transmission ~~path,~~path so as to Raman amplify the wavelength division multiplexed signal light ~~being propagated~~propagating through the Raman amplification medium,

wherein a supervisory signal transferred among said plurality of optical transmission apparatuses is selectively superimposed on the pumping light supplied to said Raman amplification medium, and

wherein when a plurality (m) of pumping lights of different wavelengths are supplied to said Raman amplification medium, and said supervisory signal is selectively superimposed on at least one of 1 through (m-1) of said plurality of pumping lights of different wavelengths.

2. (CANCELLED)

3. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed is selected out of said plurality of pumping lights based on a loss wavelength characteristic of said optical transmission path.

4. (PREVIOUSLY PRESENTED) The method of claim 3, wherein the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed is selected so that the signal loss of in a Raman gain band corresponding to a wavelength of the

one of the pumping lights is less than the loss of the optical transmission path corresponding to a wavelength of each of the others of the 1 through (m-1) pumping lights.

5. (CURRENTLY AMENDED) The method of claim 1, wherein a part of the Raman amplified wavelength division multiplexed signal light is directed to an optical filter having a passing band in a Raman gain band corresponding to a wavelength of the at least one of the 1 through (m-1) pumping lights on which the supervisory ~~}signal~~ signal is superimposed, to detect the supervisory signal using a light passing through the optical filter.

6. (PREVIOUSLY PRESENTED) The method of claim 1, wherein the supervisory signal transmitted from a previous stage optical transmission apparatus is detected and a suppression signal to suppress the detected supervisory signal on a pumping light corresponding to the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed from the previous stage optical transmission apparatus.

7. (PREVIOUSLY PRESENTED) The method of claim 6, wherein the supervisory signal to be sent to a succeeding stage optical transmission apparatus is superimposed on the at least one of the 1 through (m-1) pumping lights different from the pumping lights on which the suppression signal is superimposed.

8. (CURRENTLY AMENDED) An optical transmission system using Raman amplification, comprising:

a plurality of optical transmission apparatuses to transmit a wavelength division multiplexed signal light including a plurality of optical signals of different wavelengths, and

a Raman amplifier to Raman amplify the wavelength division multiplexed signal light ~~being propagated~~propagating through a Raman amplification medium existing on an optical transmission path by supplying a pumping light to said Raman amplification medium ~~existing on an optical transmission path~~ so as to Raman amplify the wavelength division multiplexed signal,

wherein said Raman amplifier includes a supervisory signal superimposing section to selectively superimpose a supervisory signal transferred among said plurality of optical transmission apparatuses on the pumping light supplied to said Raman amplification medium,

wherein said Raman amplifier has a plurality of pumping light sources which generate a plurality (m) of pumping lights of different wavelengths, and

wherein said supervisory signal superimposing section selectively superimposes said supervisory signal on at least one of 1 through (m-1) of said plurality of pumping lights of different wavelengths supplied to said Raman amplification medium from said respective pumping light sources.

9. (CANCELLED)

10. (PREVIOUSLY PRESENTED) The optical transmission system of claim 8, wherein the supervisory signal superimposing section selects the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed based on a loss wavelength characteristic of the optical transmission path.

11. (PREVIOUSLY PRESENTED) The optical transmission system of claim 8, wherein the supervisory signal superimposing section selects the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is so that a loss of the optical transmission path in a Raman gain band corresponding to a wavelength of the pumping light becomes relatively small.

12. (PREVIOUSLY PRESENTED) The optical transmission system of claim 8, wherein the optical sending terminal comprises an optical coupler which branches a part of the Raman amplified wavelength division multiplexed signal light sent from the optical transmission path, an optical filter which receives the branched light from the optical coupler and having a passing band in a Raman gain band corresponding to a wavelength of the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed, and a supervisory signal detecting section which detects the supervisory signal using a light passing through the optical filter.

13. (PREVIOUSLY PRESENTED) The optical transmission system of claim 8, wherein a plurality of Raman amplifiers are provided and each Raman amplifier includes a suppression signal superimposing section which superimposes a suppression signal to suppress the supervisory signal from a previous stage optical transmission apparatus detected at the corresponding optical transmission apparatus on the pumping light corresponding to the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is

superimposed .

14. (PREVIOUSLY PRESENTED) An optical transmission system using Raman amplification according to claim 13, wherein the supervisory signal superimposing section of each Raman amplifier superimposes the supervisory signal to be sent to a succeeding stage optical transmission apparatus on the a pumping light different from the at least one of the 1 through (m-1) pumping ~~light~~ lights on which the suppression signal is superimposed.

15. (CURRENTLY AMENDED) A Raman amplifier comprising:

a pumping light generating section to generate a pumping light; and

a multiplexer to supply the pumping light from said pumping light generating section to a Raman amplification ~~medium,~~ medium so as to Raman amplify a wavelength division multiplexed light ~~being propagated~~propagating through said Raman amplification medium,

wherein said Raman amplifier includes a supervisory signal superimposing section to selectively superimpose a supervisory signal transferred among said plurality of optical transmission apparatuses to transmit said wavelength division multiplexed light on the pumping light supplied to said Raman amplification medium from said pumping light generating section via said multiplexer,

wherein said Raman amplifier has a plurality of pumping light sources which generate a plurality (m) of pumping lights of different wavelengths, and

wherein said supervisory signal superimposing section selectively superimposes said supervisory signal on at least one of 1 through (m-1) of said plurality of pumping lights of different wavelengths supplied to said Raman amplification medium from said respective pumping light sources via said multiplexer.

16. (CANCELLED)

17. (PREVIOUSLY PRESENTED) A Raman amplifier according to claim 17, wherein the Raman amplifier includes a suppression signal superimposing section which superimposes a suppression signal to suppress the supervisory signal from a previous stage optical transmission apparatus on the pumping light corresponding to the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed from the previous stage optical transmission apparatus.

18. (PREVIOUSLY PRESENTED) A Raman amplifier according to claim 17, wherein the supervisory signal superimposing section superimposes the supervisory signal to be sent to a succeeding stage optical transmission apparatus on a pumping light different from the pumping light superimposed with the suppression signal.

19. (PREVIOUSLY PRESENTED) A method of Raman amplifying a wavelength division multiplexed signal light, comprising:

providing a wavelength division multiplexed signal light including a plurality of optical signals of different wavelengths through a transmission path including a Raman amplification medium disposed thereon;

supplying a plurality (m) of pumping lights of different wavelengths to the Raman amplification medium to Raman amplify a wavelength division multiplexed signal light propagating through the Raman amplification medium; and

selectively superimposing a supervisory signal on at least one of 1 through (m-1) of said plurality of pumping lights.

20. (PREVIOUSLY PRESENTED) The method of claim 19, wherein the at least one of the 1 through (m-1) pumping lights on which the supervisory signal is superimposed is selected out of said plurality of pumping lights based on a loss wavelength characteristic of said optical transmission path.

21. (CURRENTLY AMENDED) An optical transmission method, comprising:

transmitting a wavelength division multiplexed signal light having a plurality of optical signals of different wavelengths along an optical transmission path that includes a Raman amplification medium;

Raman amplifying the wavelength division multiplexed signal light propagating through the Raman amplification medium by supplying a plurality of pumping lights of different wavelengths to the Raman amplification medium and selectively superimposing a supervisory signal onto at least one of the plurality of pumping lights based on a loss wavelength characteristic of the optical transmission path.

22. (PREVIOUSLY PRESENTED) The method of claim 21, wherein the one of the

pumping lights has less loss in the Raman gain band than the other pump lights of the plurality of pump lights.

23. (CURRENTLY AMENDED) An optical transmission system comprising:

an optical sending terminal which transmits a wavelength division multiplexed signal light having a plurality of optical signals of different wavelengths; and

a Raman amplifier which Raman amplifies the wavelength division multiplexed signal light propagating through a Raman amplification medium disposed along the optical transmission path ~~by supplying a~~ using a plurality of pumping lights supplied to the Raman amplification medium, the Raman amplifier including a pumping light generating section generating ~~a~~ the plurality of pumping lights of different wavelengths and a supervisory signal superimposing section which selectively superimposes a supervisory signal onto one of the plurality of pumping lights based on a loss wavelength characteristic of the optical transmission path.

24. (PREVIOUSLY PRESENTED) The method of claim 23, wherein the one of the pumping lights has less loss in the Raman gain band than the other pump lights of the plurality of pump lights.

25. (CURRENTLY AMENDED) A Raman amplifier comprising:

a pumping light generating section which generates a plurality of pumping lights of different wavelengths;

a multiplexer which supplies the pumping lights to a Raman amplification medium ~~in which~~ so as to Raman amplify a wavelength division multiplexed light propagating therethrough ~~is Raman amplified~~; and

a supervisory signal superimposing section which selectively superimposes a supervisory signal onto at least one of the plurality of pumping lights based on a loss wavelength characteristic of the optical transmission path.

26. (PREVIOUSLY PRESENTED) The Raman amplifier of claim 25, wherein the one of the pumping lights has less loss in the Raman gain band than the other pump lights of the plurality of pump lights.

27-29. (CANCELLED)

30. (CURRENTLY AMENDED) A method comprising:

transmitting a wavelength division multiplexed (WDM) signal light through an optical transmission line, the WDM optical signal including optical signals at different wavelengths multiplexed together;

supplying a plurality of pump lights at different wavelengths to the transmission line so ~~that~~ as to Raman amplify the WDM signal light ~~is amplified by Raman amplification~~ as the WDM signal light travels through a Raman amplification medium on the transmission line; and

superimposing supervisory information onto at least one pump light of the plurality of pump lights so that, as the plurality of pump lights travel through the transmission line, the supervisory information becomes superimposed on a part of the WDM signal light in accordance with the wavelength of the pump light on which the supervisory information is superimposed.

31. (PREVIOUSLY PRESENTED) The method of 30, wherein the pump light on which the supervisory information is superimposed is selected from the plurality of pump lights so that a loss of the transmission line in a Raman gain band corresponding to the wavelength of the pump light on which the supervisory information is superimposed is smaller than losses of the transmission line corresponding to wavelengths of the other pump lights.

32. (CURRENTLY AMENDED) An apparatus comprising:

means for transmitting a wavelength division multiplexed (WDM) signal light through an optical transmission line, the WDM optical signal including optical signals at different wavelengths multiplexed together;

means for supplying a plurality of pump lights at different wavelengths to the transmission line so ~~that~~ as to Raman amplify the WDM signal light ~~is amplified by Raman amplification~~ as the WDM signal light travels through a Raman amplification medium on the transmission line; and

means for superimposing supervisory information onto at least one of the plurality of pump lights so that, as the plurality of pump lights travel through the transmission line, the supervisory information becomes superimposed on a part of the WDM signal light in accordance with the wavelengths of the pump light on which the supervisory information is

superimposed.

33. (PREVIOUSLY PRESENTED) The apparatus of claim 32, wherein the pump light on which the supervisory information is superimposed is selected from the plurality of pump lights so that a loss of the transmission line in a Raman gain band corresponding to the wavelength of the pump light on which the supervisory information is superimposed is smaller than losses of the transmission line corresponding to wavelengths of the other pump lights.